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Pulsed DC System Facilities

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For the development of high gradient accelerating structures of CLIC and other similar machines it is vital to understand the mechanism of vacuum breakdown. Previous investigations into the phenomena were performed through lengthy and costly RF conditioning of accelerating structures and cells. In an attempt to more efficiently investigate the effects of different materials and conditioning algorithms a novel pulsed DC system has been developed at CERN. This system allows for the creation of high fields between two electrodes at a repetition rate far beyond current RF systems, conditioning the surface in weeks rather than months. Complementary to this, a newly installed camera system located breakdowns through triangulation, which along with post processing microscopy, allows great insight into breakdown trends during conditioning.

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session

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